Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
International Comparison and Consumer	)	
Survey Requirements in the Broadband Data	)	**GN Docket No. 09-47**
Improvement Act	)	
	)	
A National Broadband Plan for Our Future	)	**GN Docket No. 09-51**
	)	
Inquiry Concerning the Deployment of	)	
Advanced Telecommunications Capability to	)	
All Americans in a Reasonable and Timely	)	
Fashion, and Possible Steps to Accelerate	)	
Such Deployment Pursuant to Section 706 of	)	**GN Docket No. 09-137**
the Telecommunications Act of 1996, as	)	
Amended by the Broadband Data	)	
Improvement Act	)	**DA 09-2133**

COMMENTS – NBP PUBLIC NOTICE # 14

NATIONAL EMERGENCY NUMBER ASSOCIATION

The National Emergency Number Association ("NENA")[1] respectfully submit these comments in response to the Federal Communications Commission's ("FCC" or "Commission") Public Notice seeking comments on public safety issues related to broadband deployment in rural and tribal areas and broadband communications to and from persons with disabilities.[2] NENA submitted comments on November 12 in response to National Broadband Plan Public

[1] NENA is The Voice of 9-1-1.™ NENA promotes implementation and awareness of 9-1-1 as North America's universal emergency number and is the leading professional non-profit organization dedicated solely to 9-1-1 emergency communications issues. NENA serves its nearly 7,000 members in 48 chapters across the U.S., Canada and Mexico through policy advocacy, establishment of technical and operational standards, Next Generation 9-1-1 development, certification programs and a broad spectrum of educational offerings. More information about NENA is available at www.nena.org.

[2] *Comment Sought on Public Safety Issues Related to Broadband Deployment In Rural and Tribal Areas and Broadband Communications To and From Persons with Disabilities*, DA 09-2369 (Rel. Nov. 2, 2009).

Notice #8.[3] NENA herein incorporates by reference all of those comments as they are equally relevant in rural and tribal areas. We appreciate the opportunity to offer additional perspectives concerning the deployment and use of broadband for public safety in rural and tribal areas, and for individuals with disabilities.

I. INTRODUCTION

NENA commends the Commission for seeking information on broadband deployment for public safety in rural and tribal areas and for examining how broadband can provide improved emergency services for individuals with disabilities. Access to enhanced 9-1-1 (E9-1-1) systems and modern public safety communications systems have traditionally lagged in rural and tribal areas. The primary reasons for this are a lack of funding and a lack, historically, of statewide planning to ensure that all areas within a state have sufficient emergency communications capabilities. Additionally, individuals with disabilities have lacked effective access to 9-1-1 and emergency services because of a public safety system based on analog, voice-centric technologies not compatible with the text and video-based communications services used by individuals with disabilities. However, broadband-enabled, IP-based 9-1-1 and emergency communications systems offer a technological foundation to fundamentally improve emergency communications in rural areas and for persons with disabilities in all areas.

As we have previously stated, it is essential that the National Broadband Plan's recommendations include concrete proposals and suggestions designed to facilitate the transition of our nation's 9-1-1 and emergency communications systems to broadband-enabled, IP-based platforms. The Plan should clearly articulate that it is the policy of the United States to foster the

[3] *Additional Comment Sought on Public Safety, Homeland Security, and Cybersecurity Elements of National Broadband Plan*, DA 09-2133 (Rel. Sept. 28, 2009).

migration from analog, voice-centric 9-1-1 and emergency communications systems into a broadband-enabled 21st century, IP-based emergency services model. This is particularly true for rural America and individuals with disabilities.

II. PUBLIC SAFETY BROADBAND DEPLOYMENT IN RURAL AND TRIBAL AREAS

1. Are adequate broadband services available for public safety use in rural and tribal areas?

NENA does not have specific data on the broadband services (wireline or wireless) available for public safety use in rural and tribal areas. Anecdotally, and based on general information about broadband deployment, it is safe to assume that broadband services for rural public safety use are not adequate. The unavailability of such services are largely based on the same reasons that broadband is not available to the general public in these areas – high cost to deploy and maintain networks, low numbers of potential customers to spread costs, lack of demand in some instances, etc. The lack of specific data is why NENA has previously suggested that any broadband mapping done in the states specifically assesses the broadband services available to 9-1-1 centers and other public safety agencies. We urge the Commission and related federal agencies to ensure that broadband mapping grants include a requirement to specifically map public safety broadband availability.

2. What broadband applications and services are most important to public safety agencies operating in rural and tribal areas?

It should be noted that nearly all broadband applications that are important in more populated areas are equally important in rural and tribal areas. It is NENA's hope and belief that once broadband-enabled emergency communications systems are an everyday part of life in urban and rural America, the market for public safety applications will explode as it already has

for the general public and businesses. Applications that we cannot even imagine today will emerge with specific benefits for rural emergency communications.

Video-enabled communications and the ability to push and pull data about an incident or the individuals involved are of particular value in rural areas where response times can be much longer. For example, for an overturned passenger bus or a collision in a remote area, if wireless broadband was deployed, a real-time video of the crash scene and subsequent crash scene data could be shared with 9-1-1, and forwarded to EMS responders and the trauma center. While the response time might be up to 20 minutes or longer, EMS responders could effectively prepare for the response en route and medical experts could provide instructions to individuals at the scene before responders arrive based on what they are seeing on the live video in addition to non-video information. Once at the scene and en route to the hospital, EMS responders could share vital information on patients with the hospital. While all of this is occurring, the Public Safety Answering Point (PSAP) and/or emergency responders could be pulling information about the crash victims, as authorized, concerning their medical history and medications being taken. Similarly, detailed data about the initial crash enabling a prediction about the severity of the crash could be automatically shared with the PSAP and other agencies via an advanced automatic crash notification (AACN) system. These are life-saving applications that provide a more informed response with better patient outcomes.

3. Are there an adequate number of high-capacity (wireline or wireless) broadband connections linking together critical public safety facilities (*e.g.*, police stations, fire departments, PSAPs, emergency operations centers, hospitals) in rural and tribal areas?

There are not an adequate number of high-capacity (wireline or wireless) broadband connections linking together critical public safety facilities. This is true for all areas, not just rural or tribal areas. While there are some high-capacity broadband connections linking

individual emergency domains (*e.g.* law enforcement data networks, rural health networks) there are not adequate shared systems in place linking together the multiplicity of organizations involved in emergency response. As NENA has previously stated, it is in the nation's best interest to foster interconnection of ALL public safety agencies, and specifically, to provide shared, reliable, managed private Emergency Service IP networks (ESInets)[4] connecting all public safety agencies. Building one network for 9-1-1, another for police, another for fire, another for EMS, etc, is too costly, too hard to manage and protect, and fosters silos of communication that we cannot afford. Furthermore, such siloed systems do not allow for the economic efficiencies associated with shared networks and data that broadband can provide local governments. Public safety use of broadband can provide economic efficiencies to financially strapped communities. The FCC should discourage single purpose networks and encourage all public safety agencies to share common networks, services and management where feasible. This is as much the case for rural and tribal areas as anywhere else.

4. How can the Commission ensure that rural and tribal areas are built-out as part of a nationwide 700 MHz wireless public safety broadband network? What incentives can be provided?

Access to wireless broadband systems in rural areas is a challenge, primarily due to high build-out costs, fewer agencies and individual responders that will utilize such networks, and a general lack of funding. This is why, absent a better option becoming available, NENA has, and still does, support the FCC's concept of a public/private partnership between public safety and

[4] All emergency response agencies need to be connected to ESInets. ESInets are engineered, managed networks, and are intended to be multi-purpose, supporting extended public safety communications services, in addition to 9-1-1. ESInets use broadband, packet switched technology capable of carrying voice, video, and text, plus large amounts of varying types of data using Internet Protocols and standards. ESInets will ride on a mix of commercial and government-owned network infrastructure, but simply having a broadband network pass by emergency response agencies is insufficient. Commercial and government-owned broadband networks are a critical component of our nation's homeland security, but the vision of NG9-1-1 and emergency communications requires the further step of ensuring that all public safety agencies are interconnected on ESInets riding the broadband infrastructure.

the 700 MHz D Block auction winner(s). Of course, this assumes that the D Block is not reallocated to public safety. If the D Block is reallocated to public safety, then partnerships would be possible though negotiations with the public safety broadband licensee (PSBL), public safety agencies and commercial entities. Assuming that public safety lacks the resources in many rural and tribal areas to build standalone public safety wireless broadband systems, incentives need to be provided to enable public/private partnerships between commercial providers and public safety agencies. For example, incentives could include access to high-cost Universal Service Funds for build-out in rural areas, the sharing of public safety and commercial facilities to lower infrastructure costs, and accelerated depreciation of infrastructure costs.

Additionally, ensuring access to an annually recurring source of funding for public safety broadband networks, equipment and applications is essential. Just as the E-Rate program was established to ensure schools and libraries have access to the Internet, a similar program is needed to ensure a recurring source of funds is available for public safety broadband needs in high-cost areas. Such a funding source is particularly critical for rural and tribal areas. Finally, tribal jurisdictional issues must be addressed for broadband to be efficiently and ubiquitously deployed in tribal areas.

5. How can the Commission ensure that, as other national public safety initiatives (*e.g.*, NG911) go forward requiring wireline or wireless broadband facilities, the requirements of rural and tribal areas are met?

The Commission can take several steps to ensure that the requirements of rural and tribal areas are met for public safety initiatives that require broadband facilities. First, the Public Safety and Homeland Security Bureau's Outreach Division can significantly increase education efforts in these areas about the value and need for broadband-enabled emergency communications (NG9-1-1, wireless broadband capabilities for first responders, etc.). By raising

awareness of the possibilities of broadband for public safety today and into the future, demand for broadband will naturally expand and increase the likelihood of policymakers establishing broadband for public safety in rural areas a top priority. Second, as part of the National Broadband Plan, the Commission should clearly articulate the need for innovative funding options for public safety broadband networks, equipment and applications. As stated above, this is essential for rural and tribal areas. Third, the Commission should work with other relevant federal agencies[5] to encourage and, where appropriate, require, statewide planning and funding for public safety broadband needs. Unlike the historical practice of procuring public safety systems at a local level which inevitably leads to a system of haves and have-nots, federal agencies should use any leverage that they have to encourage statewide planning for public safety broadband systems. This will ensure that rural and tribal area needs are included in the overall state plan. Progress towards this end is already being made by DHS, DOT and NTIA through grant funding requirements. The practice should be continued and encouraged by the Commission. Finally, as stated above the Commission should establish rules and incentives to encourage public/private partnerships to spur deployment in less economically viable rural and tribal areas.

6. Are there synergies in the broadband backbone architecture of the nationwide 700 MHZ wireless public safety network with other needs for wireline broadband facilities in rural and tribal areas?

Yes. Consistent with previous NENA filings, we urge the Commission and stakeholders involved in the D Block debate to consider how all the components of a national wireless public safety broadband network, including the wired portion of such a network that joins the wireless

[5] For example, the National Telecommunications and Information Administration (NTIA), the Department of Homeland Security (DHS) and the Department of Transportation (DOT).

access points, can be a part of a national "internetwork" backbone interconnecting state and regional ESINets (described in footnote 4).

7. Should commercial providers be required to provide public safety users with priority access to commercial broadband wireless and wireline facilities to the extent they are deployed within rural and tribal regions?

Where appropriate and with the right incentives provided to commercial providers, public safety users should be afforded priority access to commercial broadband wireless and wireline facilities. This will require a process to determine in advance what traffic deserves priority access.

8. How would the spectrum demands of rural or tribal public safety broadband networks differ from those of networks operating in more densely populated areas? What can be done to ensure that the spectrum demands of rural and tribal public safety broadband networks are met, and that such networks are readily capable of being upgraded or expanded to support the many bandwidth-intensive, technologically advanced broadband applications and services that public safety users may adopt in the future?

Rural areas, including tribal lands, typically do not face the same capacity issues that public safety agencies face in urban and suburban areas. The same holds true for those providing commercial services. The real unknown in the equation is the capacity requirements necessary to access and use applications in rural areas. At least initially, in the event of insufficient spectrum for public safety services in rural areas, alternatives such as access to commercial networks or relying on other public safety spectrum, e.g., 4.9 GHz, for short hall needs in a mobile environment, may provide some off-loading capabilities. Both alternatives have their limitations. In the commercial world, the public safety requirements may not be met by those providing service in rural/tribal land areas and to upgrade commercial networks for public safety grade service comes at a cost. The use of other available public safety spectrum for short-haul

communications also comes at a cost. With little funding sources with the predictability to plan for the future, such alternative may not be in the realm of reality.

9. Can unlicensed technologies, such as Wi-Fi, or licensed-light services, such as in the 3650 MHz band, play a role in public safety broadband deployment in rural or tribal areas? How might these technologies and services be made interoperable via the Internet or gateways with 4G technologies such as LTE or WiMAX deployed elsewhere? Can these technologies meet the security needs and provide other features that are required for public safety communications?

While it may be interesting to consider using Wi-Fi or community networks, the reality of such networks meeting public safety grade service demands is, at this time, unlikely. Nonetheless, NENA believes that additional exploration of this issue by expert public safety agencies and organizations is worth considering.

10. Would different technical restrictions (such as higher permitted transmitter power levels, and higher permitted cell sites) be appropriate for network deployment in rural or tribal areas? Under what conditions should these different restrictions apply and what should they be? We note that commercial wireless systems are already permitted to use somewhat higher power in rural areas. Also, what can be done to improve two-way wireless communications in rural or remote areas, where finding a return path for communications back to the transmitter may be difficult for operators of low-power, low-altitude handsets?

Taking steps as described in this question should be considered to enhance network deployment and improve coverage in rural areas. Further discussion is needed by network deployment experts to determine when and how these different restrictions should be applied. As commercial systems become increasingly relied on by public safety users, the Commission should examine these restrictions and all existing rules to determine what can be done to enhance commercial system capabilities to make them more effective for public safety use.

11. Should rural and tribal public safety entities be permitted to enter into partnerships to share spectrum or infrastructure, such as with federal agencies, commercial providers, or critical infrastructure providers? How should the Commission's control rules and precedent be applied to such partnerships, or be modified to accommodate such partnerships, and how should network access (*i.e.*, for public safety communications) be prioritized?

Yes, partnerships to share spectrum and infrastructure with federal agencies, commercial providers, and critical infrastructure providers should be permitted. It makes sense economically, will maximize overall system efficiency, and will facilitate the breakdown of silos that presently make information sharing among all of these groups difficult. NENA will not here offer any additional details concerning the Commission's control rules and precedent or how network access should be prioritized. Significant discussion on these topics has been provided, and will be added to, by other groups including the Association of Public-Safety Communications Officials (APCO) International and the Public Safety Spectrum Trust (PSST).

12. Are there any means for rural or tribal public safety agencies to obtain access to commercially-licensed spectrum or associated infrastructure? Are there opportunities to acquire spectrum through secondary market transactions (*e.g.*, the partition or disaggregation of licenses or spectrum leasing) or other arrangements with commercial licensees? Are there existing or planned municipal wireless networks in rural or tribal areas that may be leveraged for public safety use?

The sharing of commercial spectrum and infrastructure with public safety agencies should be encouraged through public private partnerships. However, for the foreseeable future, rural and tribal agencies also will rely on commercial wireless broadband systems through contractual relationships. Recognizing this reality, the FCC should investigate any means within their authority to enhance the capabilities of commercial offerings so that they can effectively meet public safety needs (see response to question 10). Finally, there may be opportunities for public safety agencies (or more likely, municipal governments) to enter into arrangements leasing excess spectrum to commercial operators. However, while such arrangements may appear to be particularly valuable in high-cost rural areas, the Commission and other public safety organizations should be aware of the reality that there is not a spectrum shortage in rural America. Thus, while leasing excess spectrum capacity to commercial operators in rural areas

may seem like an effective means to raise funds for public safety broadband networks, there may not be sufficient demand in many rural areas for this to be an effective option.

The FCC should also work with other federal agencies whose existing authority can provide a means for public safety to obtain access to commercial and public safety systems in rural and tribal areas. For example, the FCC should coordinate with the Rural Utilities Service (RUS) which has existing authority to provide low-interest loans through the "9-1-1 Access Program" established under Section 6107 of the Food, Conservation, and Energy Act of 2008.[6] The loan program gives RUS authority to make loans to State or local governments, Indian tribes, or other public entities for facilities and equipment to expand or improve in rural areas "9-1-1 access, integrated interoperable emergency communications, including multiuse networks that provide commercial or transportation information services in addition to emergency communications services, homeland security communications, transportation safety communications, or location technologies used outside an urbanized area." The Commission can work with RUS to use this existing authority to enable broadband deployment for public safety in rural and tribal areas.

13. To what extent are rural and tribal Public Safety Answering Points (PSAPs) able to access broadband applications and services, and what can be done to improve that access? Are there unique economic and social issues or concerns that affect choice of technology or services as deployed?

As stated in response to question one, NENA does not have specific data on rural and tribal PSAP access to broadband applications and services. Generally speaking, PSAPs are located in town centers and therefore have access to broadband where available. However, even where available, some PSAPs do not utilize broadband applications and services. NENA

[6] Pub. Law. 110-246.

recently completed a survey of over 600 public safety agencies (primarily PSAPs).[7] For those entities indicating that they do not currently use any form of wireline broadband (approximately 15% of total respondents), the top three reasons given for not using available broadband services were that the service is too expensive (40%), broadband is not a permitted expense under the current budget (28%), and there is little or no perceived value for broadband (28%). Similarly, for entities indicating that they do not currently use any form of wireless broadband (approximately 45% of total respondents), reasons provided were that the service is too expensive (32%), there was little or no perceived value for broadband (27%), insufficient network coverage (26%), insufficient reliability (24%), broadband is not a permitted expense under the current budget (23%), and lack of availability (18%).

To improve access, the Commission should work with NENA, other public safety organizations, and other federal agencies to better educate state and local government leaders on the importance of broadband applications and services for NG9-1-1 and public safety communications. This is both an access/infrastructure challenge and a demand challenge. The 9-1-1 system has been, and largely remains, an analog, voice-centric system with little data received from the public and little data shared from the PSAP to responders. Some in the PSAP community and in local and state government simply don't appreciate the critical need for broadband applications and services. Additionally, as discussed above, innovative funding solutions should be explored, including funding options already authorized, such as the RUS "9-1-1 Access Program" described in response to question 12.

14. What issues are unique to public safety broadband deployments in tribal areas, whether or not rural? For example, are there jurisdictional issues that complicate efforts to deploy broadband to these areas?

[7] Survey results available at http://www.nena.org/sites/default/files/Broadband%20Usage%20SurveySummary_11122009.pdf.

The most unique issues related to public safety broadband deployment on tribal lands are jurisdictional and significant poverty/funding challenges. Jurisdictional issues among, and even within, tribes can significantly complicate deploying telecommunications systems. The Commission should work with tribal organizations and other relevant stakeholders with experience on this issue to specifically discuss jurisdictional challenges and potential solutions to streamline the broadband deployment process on tribal lands. Additionally, overall funding challenges associated with broadband deployment are even greater on tribal lands where there is significant poverty. Innovative funding solutions are particularly needed in tribal areas.

15. What role can deployments in the 4.9 GHz band play in augmenting public safety broadband communications in rural or tribal areas, particularly during emergencies or other large-scale events? What needs to be done to ensure that deployment of 4.9 GHz technologies occurs in rural and tribal areas?

The use of 4.9GHz may provide some benefit in the provisioning of public safety services by providing short-hop capabilities. For example, the ability to transmit vital data from a crash victim to the ambulance and then utilizing alternative transport services, e.g., satellite or terrestrial public safety broadband, to transmit this information to the trauma center. Again, this is a matter best addressed by those more expert in the capabilities and costs of 4.9HGz use in conjunction with other broadband capabilities utilizing either other wireless bands or wired networks.

16. To what extent can satellite broadband technologies fulfill the communications needs—including the need for mission critical voice—of rural and tribal public safety entities? From the user's perspective, are there drawbacks to significant reliance on satellite-based technologies for broadband capabilities? Are there any barriers to the use of such technologies that need to be resolved? If so, what are they and how can they be addressed?

Satellite technologies can be a viable option for public safety broadband needs in rural and tribal areas. In some instances satellite systems can provide a back-up option in case

wireline or wireless broadband systems fail. In other instances, satellite systems may be the only broadband option available. Before relying on satellite technology, public safety agencies should ensure that their technical requirements can be met by satellite. For example, in our Nov. 12 response to NBP Public Notice #8, NENA offered the following concerning broadband infrastructure bandwidth and reliability requirements for NG9-1-1:

Bandwidth - 2MBit per PSAP plus 2MBit per call taker position is a reasonable total bandwidth requirement. This estimate is also valid for the dispatch part of a responder agency. Unlike most users, public safety usually requires symmetric bandwidth agreements (same upload and download rates). For the communications to responder units, our estimates are 1Mbit per agency and 1Mbit per responding unit for a small agency, 5Mbit per agency and .5Mbit per responding unit for a medium (5-20 units) and 20Mbit per agency and .25Mbit or perhaps .33Mbit per responding unit for a large agency. We expect that responder units may often use more upload bandwidth than download bandwidth for sustained times, although planning for symmetric bandwidth use will probably suffice. As with most uses for broadband, bandwidth needs for public safety will grow quickly as more broadband-enable services and applications become available.

Reliability - Because networks are being engineered with multiple connections with physical diversity, the reliability of any one connection need not be the same as the reliability of the network as a whole. In general, public safety will probably require service level agreements of 99.95% availability from its broadband suppliers.

Thus, for NG9-1-1, satellite connections should be able to meet these requirements.

17. Are there existing programs, administered through the FCC or other agencies (*e.g.*, Department of Agriculture's Rural Utilities Service), that could spur deployment for public safety broadband communications in rural or tribal areas? What can be done to improve these programs?

Yes, innovative funding solutions should be explored, including funding options already authorized, such as the RUS "9-1-1 Access Program" described in response to question 12. That program does not need to be improved. Rather, RUS needs to take the necessary steps to implement the program, which currently has not been done, but hopefully will occur in the near future. Additionally, the ENHANCE 911 Act of 2004 provided a funding vehicle by establishing the E9-1-1 Implementation and Coordination Office (ICO), a joint program between NTIA and the National Highway Traffic Safety Administration (NHTSA) and authorizing the ICO to administer a $250 million per year grant program. This grant program was expanded to include the authority to provide funds for PSAPs for the "the migration to an IP-enabled emergency network."[8] However, this authority recently expired on October 1, 2010, with only $43.5 million in grants to states awarded, far less than the authorized amount. The FCC should recommend that Congress reauthorize this important grant program and provide appropriations for the grant program which could be used to fund critically needed broadband infrastructure and ESInets necessary for NG9-1-1. Finally, DHS interoperability and other grant programs should include a greater focus on broadband, which the Commission should encourage.

18. What sources of funding for rural and tribal public safety broadband deployments are available? Are there novel funding mechanisms that should be explored?

Yes, novel funding solutions should be explored. Current funding sources are insufficient for rural and tribal broadband needs. Congress along with input from the FCC and other Federal agencies should proactively address the public safety broadband funding challenge. Funding is needed to ensure access to all forms of broadband for all 9-1-1 and emergency response organizations. To date, the Federal government has not presented dedicated funding for

[8] Pub. Law No. 110-283.

the buildout and maintenance of public safety broadband networks or for the services, technology and applications enabled by broadband. The Commission, Congress and other federal agencies need to understand the limitations of traditional grant programs and the inability to plan for the future when relying on the unpredictable nature of annual appropriations. It is essential that we look at more predictable, reliable, and dedicated sources of funding on an annual, recurring basis.

NENA strongly encourages the Commission, Congress and other federal agencies to look at unconventional, and perhaps initially controversial, ideas that may result in a known and recurring source of funding for public safety's broadband needs. For example, during a September 17, 2009 FCC oversight hearing before the House Energy and Commerce Committee's Subcommittee on Communications, Technology and the Internet, Chairman Genachowski referred to the E-Rate as one of the great successes of the 1996 Telecom Act, ensuring access to the Internet for our nation's schools and libraries. If access to broadband for public safety is as important as we all know and say that it is, surely we can come up with an innovate funding proposal as we did for schools and libraries over a decade ago.

III. PUBLIC SAFETY COMMUNICATIONS TO AND FROM PERSONS WITH DISABILITIES

1. We also seek comment on whether, how and what broadband applications can help first responders communicate with people with disabilities. Currently, for example, video remote interpreting allows facilitated person-to-person communications through sign language interpreters who are located off-site of the emergency. Can this application be used in an emergency context? Are there barriers to doing so, and if so, what are those barriers, and what are some possible solutions to overcoming those barriers?

Yes, off-site remote video interpreters that can allow person-to-person communications can be used during emergencies. Individuals with disabilities and first responders both need to have communications equipment that can establish the necessary connectivity with such

interpreters and be trained on the ability of such services. The FCC should review existing Internet-based relay service rules to ensure that no current regulations would prohibit such a service. Some in the disability rights community have expressed concern that current rules might prevent video relay service (VRS) interpreters from being used when both the first responder and victim are in same locale.

It is important to note that multi-video conferencing requires high broadband speeds for better quality. Insufficient broadband connectivity causes delays and latency problems that make this type of capability ineffective. Experts from NENA's Accessibility Committee indicate that there are a number of factors that must be considered. The main factors are bandwidth, network delay, and computation speed on mobile devices. Tests have shown that a bandwidth of about 30 Kb is sufficient for a small screen. Network delay should be .25 second or less. Computation speed to get 10 frames per second is likely sufficient as a minimum requirement, although much higher speeds are desired. American Sign Language (ASL) over video has been achieved using a modern smart phone with a 400MH processor and a 3G network. Current wireless broadband technology has been shown to be sufficient, but 4G networks will be much more effective. All of this speaks to the need for significant spectrum being made available for commercial and public safety purposes.

In addition, NG9-1-1 offers the ability to enable text or video communications from individuals with disabilities directly to 9-1-1, which the current 9-1-1 system is incapable of receiving. Where a PSAP has video capabilities and a trained call taker who can communicate in ASL, this will offer immediate and direct access to 9-1-1 for an deaf individual who can speak with the 9-1-1 call taker in his or her native language. For a PSAP that does not have an ASL trained call taker (which would be rare), remote video interpreters can be bridged into the call.

Finally, where possible, video and text-based communications to 9-1-1 should receive priority access.

2. What are the other applications that would assist people with disabilities in an emergency situation? In a situation in which the first responder could not understand a person with a severe speech disability, for example, could broadband conferencing, through video, text, and/or audio, be used to enable the first responder to communicate with the help of a person trained in understanding people with speech disabilities? Are there barriers to doing so, and if so, what are those barriers, and what are some possible solutions to overcoming those barriers?

Yes. Again, first responders need to have communications equipment that can establish the necessary connectivity with such interpreters and be trained on the ability of such services. Also, as described above, the FCC should review existing Internet-based relay service rules to ensure that no current regulations would prohibit such a service. Also, appropriate entities should be encouraged to develop first responder communications tools for use with deaf-blind victims, such as creating dynamic Braille printed pages.

IV. CONCLUSION

In conclusion, NENA commends the Commission for seeking information on broadband deployment for public safety in rural and tribal areas and for examining how broadband can provide improved emergency services for individuals with disabilities. Broadband-enabled, IP-based 9-1-1 and emergency communications systems offer a technological foundation to fundamentally improve emergency communications in rural areas and for persons with disabilities in all areas, including rural and tribal areas. We encourage the Commission to consider the recommendations provided above as it addresses rural, tribal and disability broadband issues in the National Broadband Plan.

Respectfully submitted,

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